



Office de la Propriété
Intellectuelle
du Canada

Un organisme
d'Industrie Canada

Canadian
Intellectual Property
Office

An agency of
Industry Canada

CA 2335398 A1 2002/07/30

(21) 2 335 398

(12) DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION

(13) A1

(22) Date de dépôt/Filing Date: 2001/01/30

(41) Mise à la disp. pub./Open to Public Insp.: 2002/07/30

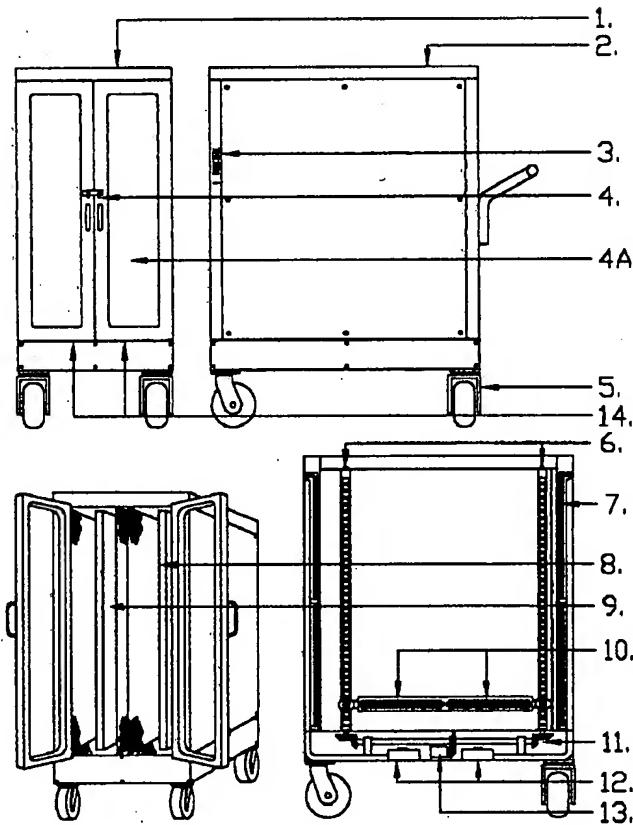
(51) Cl.Int.⁷/Int.Cl.⁷ A61L 2/10, D06M 10/00

(71) Demandeur/Applicant:
FENC, JERRY, CA

(72) Inventeur/Inventor:
FENC, JERRY, CA

(54) Titre : STERILISATEUR " PILLOW FRESH "

(54) Title: PILLOW FRESH



(57) Abrégé/Abstract:

The invention of the PillowFresh appliance is designated for dry sterilization and destruction of all known micro-organisms on pillows, duvets and blankets after usage in homes, hotels, hospitals, airlines and in other establishments using them is

(57) Abrégé(suite)/Abstract(continued):

operation. Existing standard procedure is to change only the linen on pillows, blankets and duvets without sterilization of the inner item. Some hotels and hospitals may have facilities for washing or dry-cleaning liners and bedding, but not facilities for sterilizing the pillows, duvets and blankets themselves. PillowFresh will provide dry sterilization process for left over bacteria on pillows, blankets and duvets that may have been contaminated by previous occupants of the room. This will provide a more sanitary environment for hotels, hospitals, airplanes and other institutions. "PillowFresh" with all of its parts and integrating components, all of them to required quality standards of the Canadian Standards Association (CSA) and the Underwriters Laboratory (UL) certification, will form a new unique dry sterilization device for the process of destruction of all known micro-organisms and harmful bacteria left in pillows and bedding after use. During the treatment cycle in the unit, the treated material is protected from over exposure to the ultraviolet light by the movement of the movable platform in the unit and constant uninterrupted circulating air. The perforated lining of the treatment chamber keeps the treated items in the chamber from direct contact with the ultra-violet light bulbs.

4.

General Definition

The invention of the PillowFresh appliance is designated for dry sterilization and destruction of all known micro-organisms on pillows, duvets and blankets after usage in homes, hotels, hospitals, airlines and in other establishments using them in operation.

Existing standard procedure is to change only the linen on pillows, blankets and duvets without sterilization of the inner item.

Some hotels and hospitals may have facilities for washing or dry-cleaning linens and bedding, but not facilities for sterilizing the pillows, duvets and blankets themselves.

PillowFresh will provide dry sterilization process for left over bacteria on pillows, blankets and duvets that may have been contaminated by previous occupants of the room. This will provide a more sanitary environment for hotels, hospitals, airplanes and other institutions.

"PillowFresh" with all of its parts and integrating components, all of them to required quality standards of the Canadian Standards Association (CSA) and the Underwriters' Laboratory (UL) certification, will form a new unique dry sterilization device for the process of destruction of all known micro-organisms and harmful bacteria left in pillows and bedding after use. During the treatment cycle in the unit, the treated material is protected from over exposure to the ultraviolet light by the movement of the movable platform in the unit and constant uninterrupted circulating air. The perforated lining of the treatment chamber keeps the treated items in the chamber from direct contact with the ultra-violet light bulbs.

Summary of the Invention PillowFresh (Blankets & Duvets)

This new germicidal sterilization equipment, with its new dry sterilization and destruction mechanical process, utilizes a very high-intensity germicidal ultra-violet lamp, which will destroy bacteria and micro-organisms left in pillows and bedding after use.

Underlying Principles

"PillowFresh" (Blankets & Duvets) with all its parts and integrating components, forms a new unique dry-sterilization device for the process of destruction of all known micro-organisms and harmful bacteria left in pillows and bedding after use.

Brief Description of all Drawings

Further advantages of this new invention will become apparent from the drawings and descriptions.

Page & Figure #	Description
Page 1 Figure 1	Front view of the treatment unit, with two treatment chambers of 22" x 48" x 48", clear inside dimension that will permit sterilization of blankets or duvets up to 90" x 104" size.
Page 1 Figure 2	Side view of the treatment unit.
Page 1 Figure 3	Computer operation panel to start the machine, with ON and OFF buttons, with the number sequence registering each function cycle. Also included are the operator number and company or establishment where it is used.
Page 1 Figure 4	Safety lock that permits start of the equipment only on closed electrical wiring circuit. The machine can only be started once the safety locks are closed, for the safety and protection of the operator.
Page 1 Figure 4A	Double glazed, leaded windows in the front side of the unit of 18" x 42" dimension.
Page 1 Figure 5	The treatment unit supported by four wheels with movable rotating two back wheels of the unit that gives the unit necessary maneuverability in corridors and elevators.

Page 1 Figure 6

II

One-way uninterruptedly rotating power spindles, constructed according to Möbius strip loop principle, provide the force to move the inner light bar up and down, at the rate of two to three cycles per minute.

Page 1 Figure 7

Fluorescent high-intensity germicidal ultraviolet light fixture.

Page 1 Figure 8

Centre wall of the inner treatment chamber, for the moving high-intensity germicidal ultraviolet lamps.

Page 1 Figure 9

Dividing walls between two treatment chambers for the moving high-intensity germicidal ultraviolet lamps.

Page 1 Figure 10

Moving bar, with two fluorescent high-intensity germicidal ultraviolet lamps in each side of it.

Page 1 Figure 11

Gear on the spindle in ratio of 1 to 5 to the gear of the differential gear.

Page 1 Figure 12

"Emerson"-type exhaust motor for air circulation inside the treatment units.

Page 1 Figure 13

900-1200 RPM electric motor with pressure resistance clutch with the gear in ratio of 5 to 1 to the gear on the differential gear.

Page 1 Figure 14

Two front loading treatment chambers.

Page & Figure #**Description****Page 2 Figure 1**

Rotating power spindles.

Page 2 Figure 1A

Lifter on the outside casing of the spindle, to move the bar with the two high-intensity germicidal ultraviolet lamps on each side up and down.

Page 2 Figure 2

Channels in the rotating one-way power spindle for the runner of the lifter that provides the up and down movement.

Page 2 Figure 3,5A

Casing around the spindle to protect the treated items in the chamber from "wear and tear" during the operational cycle.



Open on outside of the chamber to provide the runners on the lifters for up and down uninterrupted movement.

Page 2 Figure 3A

Electric connector to power bar in the chamber.

Page 2 Figure 3B

Electric connector for fluorescent ultraviolet germicidal light bulbs.

Page 2 Figure 4

Tension adjuster for the runner on the lifter.

Page 2 Figure 5

Spindle gear. See Page 1 Figure 11.

Page 2 Figure 5A

Casing around the spindle to protect the treated items in the chamber from "wear and tear" during the operational cycle. Open on outside of the chamber to provide the runners on the lifters for up and down uninterrupted movement.

Page 2 Figure 6

Electric motor. See Page 1 Figure 13.

Page 2 Figure 7

Assembly sequence of the lifter.

Page & Figure #

Description

Page 3 Figure 1

3 sets of power spindles per unit.

Page 3 Figure 2

3 sets of differential gears per unit.

Page 3 Figure 3

Differential gear of the motor in ratio of 5 to 1 to the differential gear.

Page 3 Figure 4

Electric motor. See Page 1 Figure 13.

Page 3 Figure 5

Moving bar. See Page 1 Figure 10.

Page 3 Figure 6

Bar lifter. See Page 2 Figure 3.

Page 3 Figure 7

Assembly sequence of the lifter.

Page 3 Figure 8

Spindle gear. See Page 1 Figure 11.

IV

<u>Page & Figure #</u>	<u>Description</u>
Page 4 Figure 1	Cross-section of front view of the treatment unit.
Page 4 Figure 1A	Cross-section of view from the top of the treatment unit.
Page 4 Figure 2	Two treatment chambers in the unit.
Page 4 Figure 3	3 sets of one-way uninterruptedly rotating power spindles per unit, constructed according to Möbius strip loop principle, provide the force to move the inner light bar up and down, at the rate of two to three cycles per minute.
Page 4 Figure 4	Ducting to full height of the unit for air circulating fan.
Page 4 Figure 5	Electric motor. See Page 1 Figure 13.
Page 4 Figure 6	Safety lock to start the equipment.
Page 4 Figure 7	Pull-out stand, in each of the treatment chambers to hang up the blankets or duvets for treatment.
Page 4 Figure 8	Fluorescent ultraviolet germicidal lights.
Page 4 Figure 9	Two treatment chambers per unit.
Page 4 Figure 10	Three power bars in each unit. See page 1 Figure 10.

V

Page & Figure #	Description
Page 5 Figure 1	Pull-out stand for hanging the blankets or duvets for treatment.
Page 5 Figure 2	Wire construction stand assembly.
Page 5 Figure 2A	Fold-out support in front of the pull-out stand.
Page 5 Figure 3	Electric power bar in the treatment chamber, for fluorescent light bulb.
Page 5 Figure 4	Two spindles for each moveable bar.
Page 5 Figure 5	Connector to electric power bar in chamber.
Page 5 Figure 5A	Moveable bar, in the treatment chamber.
Page 5 Figure 6	Fluorescent ultraviolet germicidal lights.

General Definition**VI**

The invention of the PillowFresh (Blankets & Duvets) appliance is designated for dry sterilization and destruction of all known micro-organisms on pillows, duvets and blankets after usage in homes, hotels, hospitals, airlines and in other establishments using them in operation.

Existing standard procedure is to change only the linen on pillows, blankets and duvets without sterilization of the inner item.

Some hotels and hospitals may have facilities for washing or dry-cleaning linens and bedding but not facilities for sterilizing the pillows, duvets and blankets themselves.

PillowFresh (Blankets & Duvets) will provide dry sterilization process for left over bacteria on pillows, blanket and duvets that may have been contaminated by previous occupants of the room. This will provide a more sanitary environment for hotels, hospitals, airplanes and other institutions.

"PillowFresh" (Blankets & Duvets) with all its parts and integrating components, all of them to required quality standards of the Canadian Standards Association (CSA) and the Underwriters' Laboratory (UL) certifications, will form a new unique dry sterilization device for the process of destruction of all known micro-organisms and harmful bacteria left in bedding blankets & duvets after use. During the treatment cycle in the unit, the treated material is protected from over-exposure to the ultraviolet light by the movement of the movable platform in the unit and constant uninterrupted circulating air. The perforated lining of the treatment chamber keeps the treated items in the chamber from direct contact with the ultra-violet light bulbs.

What is claimed is:

PillowFresh unit, comprising:

1. The germicidal ultraviolet unit with treatment chambers.
2. The treatment unit, supported by four wheels with two moveable back wheels that will permit it maneuverability in corridors and elevators.
3. The door locks with safety connectors that permit the unit to start the sterilization process only with a closed electrical circuit.
4. The unit with its two self adjusting air circulation vent systems.
5. The inside walls of the treatment unit are lined with a stainless steel high gloss embossed surface material to reflect the ultra-violet light and air in all directions in the unit to enhance its circulation and penetration during the treatment process.

General DefinitionVI

The invention of the PillowFresh (Blankets & Duvets) appliance is designated for dry sterilization and destruction of all known micro-organisms on pillows, duvets and blankets after usage in homes, hotels, hospitals, airlines and in other establishments using them in operation.

Existing standard procedure is to change only the linen on pillows, blankets and duvets without sterilization of the inner item.

Some hotels and hospitals may have facilities for washing or dry-cleaning linens and bedding but not facilities for sterilizing the pillows, duvets and blankets themselves.

PillowFresh (Blankets & Duvets) will provide dry sterilization process for left over bacteria on pillows, blanket and duvets that may have been contaminated by previous occupants of the room. This will provide a more sanitary environment for hotels, hospitals, airplanes and other institutions.

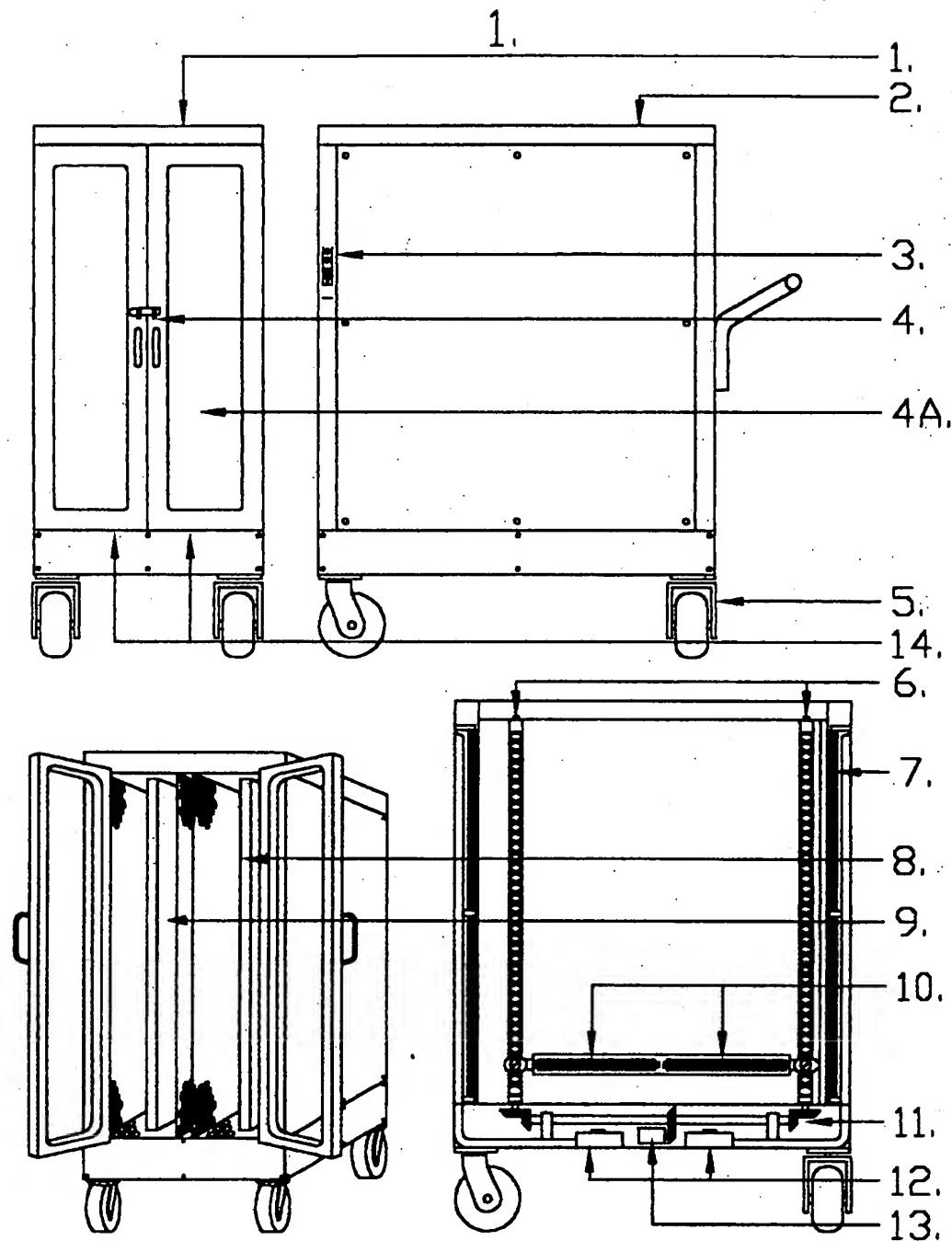
"PillowFresh" (Blankets & Duvets) with all its parts and integrating components, all of them to required quality standards of the Canadian Standards Association (CSA) and the Underwriters' Laboratory (UL) certifications, will form a new unique dry sterilization device for the process of destruction of all known micro-organisms and harmful bacteria left in bedding blankets & duvets after use. During the treatment cycle in the unit, the treated material is protected from over-exposure to the ultraviolet light by the movement of the movable platform in the unit and constant uninterrupted circulating air. The perforated lining of the treatment chamber keeps the treated items in the chamber from direct contact with the ultra-violet light bulbs.

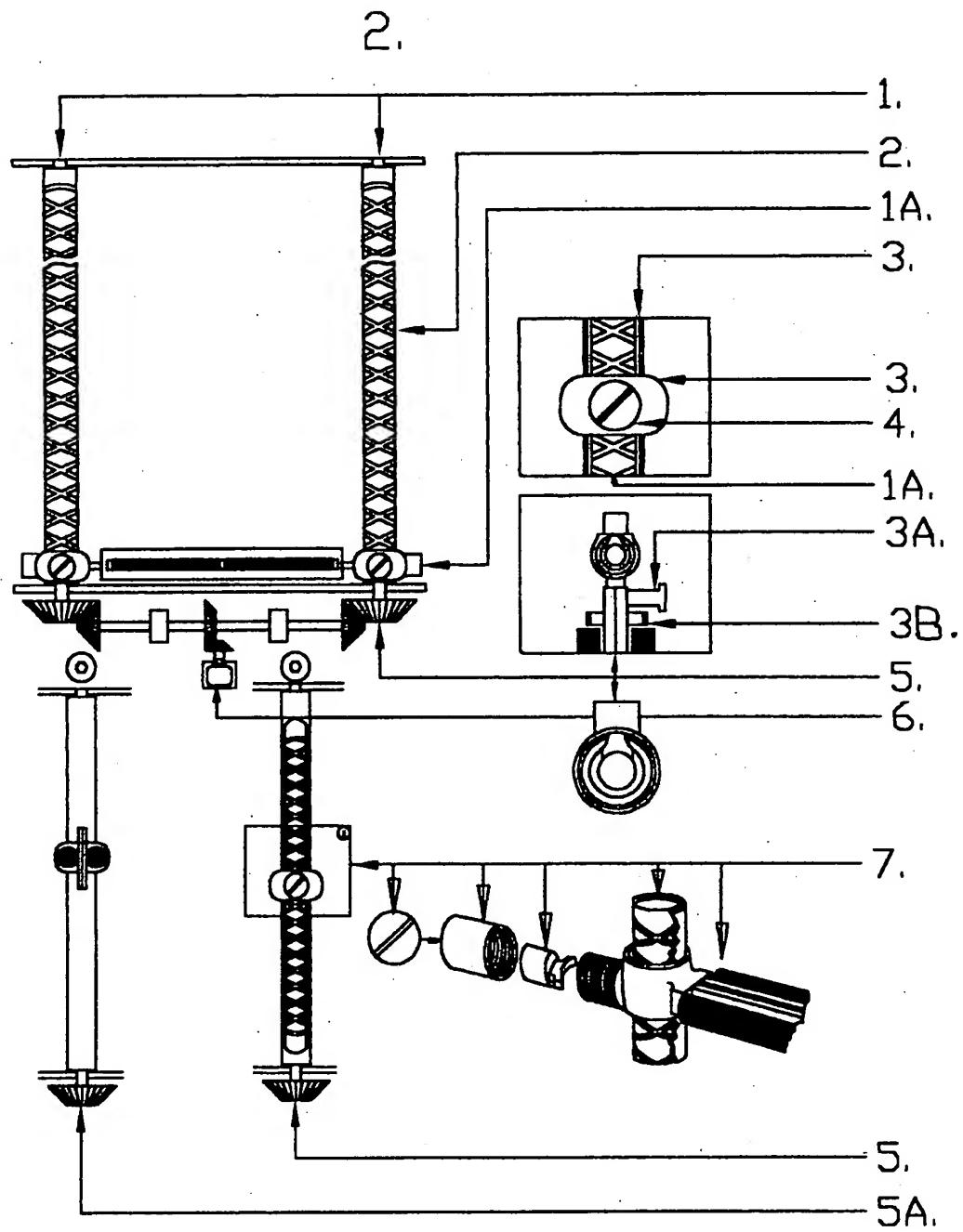
What is claimed is:**PillowFresh unit, comprising:**

1. The germicidal ultraviolet unit with treatment chambers.
2. The treatment unit, supported by four wheels with two moveable back wheels that will permit it maneuverability in corridors and elevators.
3. The door locks with safety connectors that permit the unit to start the sterilization process only with a closed electrical circuit.
4. The unit with its two self adjusting air circulation vent systems.
5. The inside walls of the treatment unit are lined with a stainless steel high gloss embossed surface material to reflect the ultra-violet light and air in all directions in the unit to enhance its circulation and penetration during the treatment process.

VII

6. The interior walls of the treatment chambers, and inside lining of the unit door that are of high gloss perforated stainless steel material that will permit light and air circulation and penetration in the unit.
7. Rotating in one direction only, the four round spindles of carbon steel alloy material C-1045 will not require lubrication, and will allow the runners in the spindle grooves to move the chamber's treatment bar up and down.
8. The channel grooves on the spindles that are constructed according to the "Möbius strip loop" principle, to the full height on the rotating spindle. This allows uninterrupted up and down movement on them, and lifts the bar in the treatment chambers to the full height of the spindle.
9. The stationary casing around the spindle that protects the treated items in the chamber from wear and tear during the operational cycle. Open on the outside of the chamber side to its full height to provide unobstructed movements in the spindles' grooves for uninterrupted up and down motion, to lift the bar in the chamber in the same fashion.
10. The edge on the runners, running in the spindles' grooves in the lifter assembly, that are of the same diameter as the inside diameter of the inside grooves in the spindle.
11. The movable lifter that runs on the outside of the spindle and its casing that locks into a connector in the movable bar.
12. The runner in the lifter assembly unit has a tension adjuster.
13. The treatment unit with an air circulation system with open vents, to the full height of treatment unit, which is constantly forcing and circulating the air and light by the high-intensity germicidal ultra-violet light lamps and through the unit.
14. The treatment unit with the three movable bars, with the two high-intensity germicidal ultra-violet fluorescent bulbs on each side, by its up and down movement in the treatment chamber is constantly keeping the blankets and duvets under the pressure of the circulating air and light that has already passed by the high intensity germicidal ultra-violet fluorescent light lamps. This dry sterilization process creates the sterilization of the bacteria and any other micro-organisms left in the blankets and duvets after use.





3.

